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Emotional Deficits in Military-Related PTSD: An Investigation of Content and Process Disturbances

Candice M. Monson,[1,2,5] Jennifer L. Price,[1,2] Benjamin F. Rodriguez,[3] Moira P. Ripley,[1,2] and Reid A. Warner[4]

To expound on the nature of emotional deficits in PTSD, the current study investigated the relationships among emotion content and process variables and PTSD symptomatology in a sample of 85 veterans with military-related trauma. Alexithymic externally oriented thinking and negative affectivity emerged as the most consistent predictors of PTSD symptoms; however, depression was the only variable associated with emotional numbing. Theoretical and clinical implications of these findings are discussed, as well as future research directions including the collateral and clinician assessment of emotional functioning, use of other process measures, and inclusion of various control groups.

KEY WORDS: emotion; PTSD; affect; alexithymia; emotional numbing; experiential avoidance.

Despite their prominent role in the syndrome, deficits in emotional functioning have been described as among the least understood and studied features of posttraumatic stress disorder (PTSD; Litz, Orsillo, Kaloupek, & Weathers, 2000). Relationships between PTSD and a range of positive and negative emotions (e.g., anger, depression, guilt/shame) are well established (e.g., Chemtob, Novaco, Hamada, & Gross, 1997; Kubany & Watson, 2002). Deficits in the emotional processes governing emotional content are described in emotion and information processing theories of PTSD (e.g., Foa & Kozak, 1991; Horowitz, 1986). Within this domain, disruption in the ability to identify, label, and express affective states, referred to as alexithymia (Taylor, 1984), can occur. Alexithymia has been established as a unique construct separate from, but related to, basic dimensions of personality, somatic presentations, ego strength, anger expression, emotional numbing, apathy, and depression (Bagby, Taylor, & Parker, 1988; Luminet, Bagby, Wagner, Taylor, & Parker, 1999; Müllera, Bühnerb, & Ellgringa, 2003; Ramirez et al., 2001).

Previous empirical research has demonstrated relationships among trauma exposure, PTSD, and alexithymia in a variety of traumatized samples (e.g., Badura, 2003; Yehuda et al., 1997; Zlotnick, Mattia, & Zimmerman, 2001). However, no study to date has examined dimensions of alexithymia, and nearly all utilized earlier measures of alexithymia shown to have poorer psychometric properties (e.g., Taylor, Ryan, & Bagby, 1985).

The first goal of this study was to investigate relationships among PTSD symptomatology, various types of emotions, and the emotional processes comprising alexithymia in a sample of veterans with military-related trauma. The second goal was to examine the relative importance of these emotional variables to total PTSD symptomatology, and to the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (*DSM-IV*; American

[1]VA National Center for PTSD, Executive Division, White River Junction, Vermont.
[2]Department of Psychiatry, Dartmouth Medical School, Hanover, New Hampshire.
[3]Southern Illinois University, Carbondale, Illinois.
[4]Dartmouth College, Hanover, New Hampshire.
[5]To whom correspondence should be addressed at VA National Center for PTSD (116), 215 N. Main, White River Junction, Vermont 05009; e-mail: candice.monson@dartmouth.edu.

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Psychiatric Association [APA], 1994) PTSD symptom clusters. In light of data indicating that emotional numbing and effortful avoidance have different underlying mechanisms (Litz et al., 2000) and are differentially predictive of the development and trajectory of PTSD (Feeny, Zoellner, Fitzgibbons, & Foa, 2000), these symptoms were examined separately to determine their association with the emotion variables.

Method

Participants and Procedure

A total of 85 male participants diagnosed with military-related PTSD completed the assessment materials prior to their participation in a specialized Department of Veterans' Affairs Medical Center intensive treatment program for PTSD. Their demographic characteristics were consistent with the larger population of veterans seeking specialized VAMC PTSD services (Rosenheck & Fontana, 2003).

Measures

PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993*)*

The PCL is a 17-item self-report measure of PTSD symptoms consistent with the DSM-IV. The psychometric properties of the PCL are well established (e.g., Forbes, Creamer, & Biddle, 2001). In the present study, total and symptom cluster scores were used.

Beck Depression Inventory (BDI; Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961*)*

The BDI is a 21-item self-report measure designed to assess degree of depressive symptomatology. A meta-analysis of the psychometric properties of the BDI demonstrated excellent psychometric properties (Beck, Steer, & Garbin, 1988).

Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988*)*

The PANAS is a 20-item self-report scale designed to measure positive and negative affectivity as dominant and relatively independent dimensions of mood during the previous several weeks. Both 10-item scales, Positive Affect and Negative Affect, have been shown to have strong psychometric properties (Watson et al., 1988).

Toronto Alexithymia Scale (TAS-20; Bagby, Taylor, & Parker, 1994a*)*

The TAS-20 is a 20-item self-report instrument measuring three dimensions of alexithymia: difficulty identifying feelings (TAS-20-DIF); difficulty describing feelings (TAS-20-DDF); and externally oriented thinking (TAS-20-EOT). This version of the TAS has been found to have good psychometric properties (Bagby, Taylor, & Parker, 1994b; Ramirez et al., 2001).

Results

Bivariate relationships between the emotion variables and PTSD symptoms were initially explored, followed by a series of six linear regressions examining the relative importance of the emotion measures in PTSD symptoms (i.e., total, *DSM-IV* clusters, effortful avoidance, and emotional numbing symptoms separately). In light of the multiple analyses, a more conservative $p < .01$ was used for the overall regressions, but individual predictors were considered significant at $p < .05$.

Nearly all the bivariate correlations were significant and in the expected direction (see Table 1). In the regression analyses, externally oriented thinking (TAS-20-EOT) and the experience of negative emotions (PANAS-NEG) emerged as significant predictors of total PTSD, reexperiencing, avoidance/numbing, and hyperarousal symptoms. Difficulty describing feelings (TAS-20-DDF) was significantly associated with reexperiencing

Table 1. Bivariate Relationships Between the Emotional Variables and PTSD Symptomatology

	BDI	PANAS-POS	PANAS-NEG	TAS-20-DIF	TAS-20-DDF	TAS-20-EOT
PCL-TOTAL	.43**	−.03	.48**	.33**	.34**	.42**
PCL-REX	.27*	.09	.40**	.30**	.41**	.35**
PCL-A/N	.48**	−.18*	.43**	.27*	.20	.39**
PCL-HYP	.30*	.05	.39**	.25*	.23*	.31**
PCL-Numb	.41**	−.16	.29*	.22*	.20	.29**
PCL-Avoid	.41**	−.14	.43**	.23*	.14	.37**

Note. $^{*}p < .05$. $^{**}p < .01$.

symptoms only. When the avoidance/numbing symptoms were separated, externally oriented thinking (TAS-20-EOT) and the experience of negative emotions (PANAS-NEG) were associated only with effortful avoidance symptoms. Depression (BDI) was initially associated with the avoidance/numbing cluster, but subsequently only with numbing symptomatology when effortful avoidance was parceled out (see Table 2).

Discussion

In this study of emotional factors and PTSD, negative affectivity and alexithymic externally oriented thinking consistently emerged to predict PTSD symptoms. These results buttress assertions that, in addition to anxiety, PTSD is characterized by disturbance in multiple negative emotions. The findings also suggest that patients who are prone to direct their thinking to superficial, external events in lieu of internal emotional experiences have more severe PTSD symptoms. "Experiential avoidance," or the active avoidance of private experiences such as feelings, memories, behavioral predispositions, and thoughts, is a related construct that has recently been implicated in PTSD (Boeschen, Koss, Figueredo, & Coan, 2001). These results are also congruent with emotional processing theories of PTSD, which attribute the paradoxical increase or maintenance of reexperiencing and hyperarousal

Table 2. Emotion Variables Association With PTSD Symptomatology

	B	*SE B*	*β*eta	*t*
Total PTSD symptoms (PCL-TOTAL), $F(6, 78) = 7.66$, $p < .001$, Adjusted $R^2 = .32$.				
TAS-20-EOT	.59	.19	.29	3.03**
TAS-20-DDF	.28	.31	.10	0.91
TAS-20-DIF	.02	.18	.01	0.09
BDI	.18	.12	.16	1.46
PANAS-NEG	.38	.14	.30	2.68**
PANAS-POS	.08	.11	.07	0.74
PTSD reexperiencing symptoms (PCL-REX), $F(6, 78) = 5.70$, $p < .001$, Adjusted $R^2 = .25$.				
TAS-20-EOT	.23	.09	.25	2.48*
TAS-20-DDF	.34	.15	.26	2.33*
TAS-20-DIF	.01	.09	−.01	−0.12
BDI	.01	.06	.01	0.10
PANAS-NEG	.14	.07	.25	2.15*
PANAS-POS	.08	.05	.15	1.53
PTSD avoid/numb symptoms (PCL-A/N), $F(6, 78) = 6.85$, $p < .001$, Adjusted $R^2 = .30$.				
TAS-20-EOT	.24	.09	.26	2.63**
TAS-20-DDF	−.09	.15	−.07	−0.64
TAS-20-DIF	.02	.09	.03	0.26
BDI	.14	.06	.28	2.45*
PANAS-NEG	.14	.07	.24	2.10*
PANAS-POS	−.04	.06	−.07	0.49
PTSD hyperarousal symptoms (PCL-HYP), $F(6, 78) = 3.71$, $p < .01$, Adjusted $R^2 = .16$.				
TAS-20-EOT	.13	.06	.22	2.03*
TAS-20-DDF	.04	.10	.04	0.36
TAS-20-DIF	.005	.06	.01	0.08
BDI	.03	.04	.11	0.84
PANAS-NEG	.10	.04	.27	2.21*
PANAS-POS	.04	.03	.12	1.18
PTSD emotional numbing symptoms (PCL-Numb), $F(6, 78) = 3.43$, $p < .01$, Adjusted $R^2 = .15$.				
TAS-20-EOT	.09	.06	.17	1.57
TAS-20-DDF	.01	.09	.01	0.08
TAS-20-DIF	.01	.05	.03	0.26
BDI	.08	.03	.28	2.25*
PANAS-NEG	.03	.04	.09	0.70
PANAS-POS	−.02	.03	−.07	−0.68
PTSD effortful avoidance symptoms (PCL-Avoid), $F(6, 78) = 5.64$, $p < .001$, Adjusted $R^2 = .25$.				
TAS-20-EOT	.15	.06	.26	2.58**
TAS-20-DDF	−.10	.10	−.12	−1.06
TAS-20-DIF	.01	.06	.02	0.16
BDI	.06	.04	.20	1.68
PANAS-NEG	.11	.04	.30	2.58**
PANAS-POS	−.02	.03	−.05	−0.54

Note. *$p < .05$. **$p < .01$.

symptoms to the avoidance of internal and external traumatic reminders.

An important exception to the pattern of predictors was revealed when emotional numbing was considered separately from avoidance symptoms. Depression was then the only significantly associated emotion variable. Avoidance has been postulated to involve strategic, effortful processes aimed at avoiding trauma stimuli, whereas numbing has been theorized to be a form of conditioned "emotional analgesia" that results from exposure to uncontrollable and unpredictable aversive stimuli (Foa, Zinbarg, & Rothbaum, 1992). If an emotional pain site is "anesthetized" it is difficult to recognize emotions, much less discriminate, describe, or regulate these emotions. Bearing in mind the correlational versus causative nature of these relationships, we propose that depression may be a secondary effect of numbing recognition rather than vice versa. Future longitudinal research would aid evaluation of this and alternative explanations regarding the unique relationship of depression with emotional numbing.

In assessing and treating PTSD, clinicians should remain aware of the range of possible problematic emotion states. Because externally oriented thinking may pose challenges to successful treatment, interventions that improve emotional processes may be useful adjunctive or stand-alone treatments for PTSD (e.g., Cloitre, Koenen, Cohen, & Han, 2002; Paivio & Nieuwenhuis, 2001). Meanwhile, it is important to consider the probable bidirectional relationship between PTSD and alexithymia; at least one study has found pre- to post-CBT treatment improvements in alexithymia (Kimball, 1999).

This study is limited by the exclusive use of self-report assessment. Respondents with emotional disturbances and a chronic condition such as PTSD may have inherent difficulty reporting about their emotions and symptoms. Clinician interviews and collateral reports would shed additional light on these issues. Investigating additional emotion process variables such as emotion regulation is also recommended. Finally, research with other types of traumatized samples would increase the generalizability of the current findings and would further delineate the complex role of emotions and their governing processes in the development and maintenance of PTSD.

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